

Date: Fri, 17 Jun 94 04:30:17 PDT  
From: Ham-Digital Mailing List and Newsgroup <ham-digital@ucsd.edu>  
Errors-To: Ham-Digital-Errors@UCSD.Edu  
Reply-To: Ham-Digital@UCSD.Edu  
Precedence: Bulk  
Subject: Ham-Digital Digest V94 #199  
To: Ham-Digital

Ham-Digital Digest                      Fri, 17 Jun 94                      Volume 94 : Issue 199

Today's Topics:

FCC to rule on HF forwarding  
Ham-Digital Digest V94 #198  
Kudos to AEA on PK-232/TS-450 Interface  
Railroad track as an antenna? (2 msgs)  
Standard Digital Radio Interface Proposal (long)

Send Replies or notes for publication to: <Ham-Digital@UCSD.Edu>  
Send subscription requests to: <Ham-Digital-REQUEST@UCSD.Edu>  
Problems you can't solve otherwise to brian@ucsd.edu.

Archives of past issues of the Ham-Digital Digest are available  
(by FTP only) from UCSD.Edu in directory "mailarchives/ham-digital".

We trust that readers are intelligent enough to realize that all text  
herein consists of personal comments and does not represent the official  
policies or positions of any party. Your mileage may vary. So there.

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Date: 16 Jun 94 23:46:37 GMT  
From: news-mail-gateway@ucsd.edu  
Subject: FCC to rule on HF forwarding  
To: ham-digital@ucsd.edu

Report No. DC-2613                      ACTION IN DOCKET CASE                      June 15, 1994

AUTHORIZATION OF AUTOMATIC CONTROL FOR HF DIGITAL COMMUNICATIONS  
IN AMATEUR SERVICE PROPOSED  
(PR DOCKET 94-59)

The Commission has proposed amending the amateur service  
rules to authorize automatic control of stations transmitting a  
digital emission on the High Frequency (HF) amateur service  
bands.

This action was requested in petitions filed by The American  
Radio Relay League, Inc. (ARRL), and the American Digital Radio

Society, Inc. (ADRS)

The propagation characteristics of the HF bands allow for long distance communications. Amateur operators take advantage of these characteristics to communicate with other amateur stations all over the world. Establishing and maintaining a HF communications link, however, presents operating demands not encountered on the Very High Frequency (VHF) and higher frequency bands. The variables affecting communications in the HF bands are highly complex. To maintain the communications link and avoid causing interference to the communications of other amateur stations, the control operator constantly monitors the activity on the channel being used and adjusts the station's transmitting parameters as needed. Because the presence of the control operator has been necessary for proper operation in these systems, automatic control of an amateur station that is transmitting on any HF band or on the 160 meter MF (medium frequency) band has not been authorized.

In 1986 the Commission authorized automatic control of amateur stations transmitting digital communications on the VHF and higher frequency bands and indicated it was interested in authorizing automatic control of stations using the HF bands.

To determine solutions to the problem of avoiding interference from automatically controlled HF digital stations the ARRL conducted a successful feasibility project under special temporary authority the Commission granted to 50 amateur stations. The ARRL's petition is based on the results of that study. The ADRS's petition contained an additional recommendation from amateur operators who have been experimenting for several decades with digital communications on the HF bands.

The Commission said it was gratified by the cooperation and dedication of organizations within the amateur service community in determining the conditions necessary to allow automatic control of stations transmitting data and RTTY (narrow-band direct printing) emission types on the HF amateur service bands. It agreed with the petitioners that automatic control of amateur stations in the HF bands can, with safeguards, make the transmission of data and RTTY emission types practical and effective.

Therefore, the Commission proposed to authorize automatic control for stations transmitting data and RTTY emission types on one specific subband of each HF band where such emissions are authorized. It also proposed to authorize communications between a locally or remotely controlled station and an automatically

controlled station on any frequency where data and RTTY emission types are otherwise authorized.

The Commission said that it firmly believes in the principle that government should be responsive to user needs. It noted that the rules it proposed were the result of a successful feasibility project planned and carried out within the amateur service community and represent the recommendations of two organizations dedicated to bringing the benefits to be derived from the transmission of digital communications on the amateur service HF bands to amateur operators in the United States and elsewhere without causing unnecessary interference to other types of communications.

Action by the Commission June 13, 1994, by Notice of Proposed Rulemaking (FCC 94-171). Chairman Hundt, Commissioners Quello and Barrett, with Commissioners Ness and Chong not participating.

- FCC -

News Media contact: Rosemary Kimball at (202) 418-0500.

Private Radio Bureau contact: William T. Cross at (202) 632-4964

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This message forwarded by TAPR

Tucson Amateur Packet Radio

8987-309 E Tanque Verde Rd #337 \* Tucson, Az \* 85749-9399 \* 817-383-0000

-----  
Date: 16 Jun 94 18:58:45 GMT  
From: news-mail-gateway@ucsd.edu  
Subject: Ham-Digital Digest V94 #198  
To: ham-digital@ucsd.edu

If I don't post to the list How DO I get info back? What is a list for anyway?  
Ken

>>RVGC2@VTVM1.CC.VT.EDU<<  
>>PHONES 703-857-7584 >>VATECH CAMPUS 13855<<  
>>FAX 703-857-7371<< KEW6X@POE.ACC.VIRGINIA.EDU >>  
>>ARMY MARS AAT3PK/VA<< AMATEUR>N4LYO<<  
>>IBMMAIL (USVPITMA)<<  
ROANOKE VALLEY GRADUATE CENTER  
US SNAIL: 117 W. CHURCH AVE.

ROANOKE, VA. 24011-1905

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Date: 16 Jun 1994 14:03:34 -0500  
From: ihnp4.ucsd.edu!swrinde!cs.utexas.edu!gerald@cc.utexas.edu!  
austin.lockheed.com!kestrel.austin.lockheed.com!not-for-mail@network.ucsd.edu  
Subject: Kudos to AEA on PK-232/TS-450 Interface  
To: ham-digital@ucsd.edu

Ref: My (kd5vu) posting "Wimpy AFSK Output TS-450S"

First, the problem is HISTORY and the TS-450 and PK-232 are working great.

The following are my notes on how to interface a PK-232MBX to a TS-450S/AT for FSK Operation. These notes are based on tips and notes from Richard Stuart, WF7A, from AEA. Richard really helped and I appreciate AEA's technical support to old customers as well as new customers. BUY AEA products!

You need two wires from the PK-232 (from J7 and J7) to one ACCY2 port on the TS-450S/AT. The following are the connections:

PK-232MBX to TS-450S via ACC-2 Connector for FSK

PK-232 (J-6)		TS-450S/AT (ACCY-2)
=====		=====
Pin 5 RED	PTT	Pin 9 PTT
Pin 4 BROWN	GND	Pin 8 GND
Pin 3 BLACK	-	Not Used
Pin 2 WHITE	AFSK-OUT	Not Used
Pin 1 GREEN	AFSK-IN	Pin 3 AFSK-OUT
Shield		Pin 12 GND

PK-232 (J-7)		TS-450S/AT (ACCY-2)
=====		=====
Pin 4	FSK-R	Pin 2 RKT
Pin 2	GND	Pin 12 (shield)

Forget about even trying to run the TS-450 in AFSK. Go FSK and you will not have problems. The TS-450 is hosed for AFSK. Don't waste your time or money on a phone call to Kenwood for help.

If you have a TS-450, I suggest you SAVE this message.

Dick Kriss, KD5VU  
On: 6/16/94 2:07:55 PM CST

=====  
Richard (Dick) Kriss      E-Mail:kriss@austin.lockheed.com  
904 Dartmoor Cove      Packet Radio: SP KD5VU @ N5LJF.#AUS.TX.USA.NA  
Austin, Texas 78746      Phone: 512-386-4153 (day) or 327-9566 (evenings)  
                             AMPRnet: kd5vu@kd5vu.ampr.org

My employer has nothing to do with this message! ... \_.\_

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Date: 16 Jun 94 16:33:28 GMT  
From: ihnp4.ucsd.edu!swrinde!howland.reston.ans.net!europa.eng.gtefsd.com!  
newsxfer.itd.umich.edu!newsrelay.iastate.edu!news.iastate.edu!jvp@network.ucsd.edu  
Subject: Railroad track as an antenna?  
To: ham-digital@ucsd.edu

In <jfhCrHvnC.Gz8@netcom.com> jfh@netcom.com (Jack Hamilton) writes:

>s9898198@sandcastle.cosc.brocku.ca (STORM JAMES) wrote:  
>>I have heard a legend that a college radio station (either at MIT, Tufts,  
>>or Swarthmore) welded antenna to railroad tracks, and peeved the FCC by  
>>broadcasting nationwide. Is this true? If anyone knows, please email me  
>>(or post here) If you do know, could you please direct me to some  
>>documentation regarding this legend if you can.

>Seems unlikely. The railroad system is not one giant circuit. There are  
>breaks everywhere.

Plus wouldn't it be grounded at points? I don't know if insulating  
the tracks is a design criterion. This would make it even more unlikely.

+-----+  
| Jim Van Peurse - Ph.D. Candidate      (Ham Radio -> KE0PH) |  
| Department of Electrical Engineering and Computer Engineering |  
| Iowa State University - Ames, IA 50011 : (515) 294-8339 |  
| internet - jvp@iastate.edu -or- jvp@cpre1.ee.iastate.edu |  
+-----+

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Date: 16 Jun 94 10:48:46 -0700  
From: ihnp4.ucsd.edu!usc!howland.reston.ans.net!europa.eng.gtefsd.com!  
newsxfer.itd.umich.edu!nntp.cs.ubc.ca!mala.bc.ca!wagner@network.ucsd.edu  
Subject: Railroad track as an antenna?  
To: ham-digital@ucsd.edu

In article <jfhCrHvnC.Gz8@netcom.com>, jfh@netcom.com (Jack Hamilton) writes:

> s9898198@sandcastle.cosc.brocku.ca (STORM JAMES) wrote:  
 >>I have heard a legend that a college radio station (either at MIT, Tufts,  
 >>or Swarthmore) welded antenna to railroad tracks, and peeved the FCC by  
 >>broadcasting nationwide. Is this true? If anyone knows, please email me  
 >>(or post here) If you do know, could you please direct me to some  
 >>documentation regarding this legend if you can.  
 >  
 > Seems unlikely. The railroad system is not one giant circuit. There are  
 > breaks everywhere.  
 >  
 > --  
 >  
 > -----  
 > Jack Hamilton jfh@netcom.com packet: kd6ttl@n0ary.#nocal.ca.us.na

Modern railays use "block control/detection" for location of trains. This system relies on the the fact that a railroad train can be a moving short circuit. This fact is detected for block detection and to signal level crossings of the presence of trains. To do this the rail system is deliberately insulated into sections. A low voltage bridge circuit is used to detect the short between the two tracks. The reason a bridge is used is to compensate for ground leakage due to wet ties.

A stretch of track behind your house might make a great shortwave recieving antenna but it would be a real bugger to load!

BTW track maintenance gear has insulated wheels so that they don't trip the detection circuitry.

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Proud owner of a dog, cat, bird, old Tractor and a British Car  
 "If Lucas Electric made guns wars wouldn't start"

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 Date: Thu, 16 Jun 1994 15:43:19 GMT  
 From: ihnp4.ucsd.edu!swrinde!emory!cs.utk.edu!stc06r.CTD.ORN.L.GOV!ornl!  
 xdepc.eng.ornl.gov!wyn@network.ucsd.edu  
 Subject: Standard Digital Radio Interface Proposal (long)

In article <jra1854.1122163943A@news.tntech.edu> jra1854@tntech.edu (Jeffrey Austen) writes:

>Here is an article which was just published in PSR. Comments?

# >A Proposal for a Standard Digital Radio Interface

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>The physical connector selected is a high-density 15-pin D-series
>connector. This connector is small enough to be used on mobile and
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[stuff deleted]

In all of the rambling I lost track of how many of the 15 pins would be used and how many would be spares. Some ASCII art would be helpful here. Anyway, make sure there are plenty of spares even if you need to go to the 25-pin D series. Straight through DB 25 modem cables are plentiful and cheap. While the author said future growth was being taken care of, I did not see mentioned some of the future features that have been discussed here, such as automatic adaptive control (power, bandwidth, frequency, cellular like), which will require more parallel circuits between the TNC and DR.

73,  
C. C. (Clay) Wynn N4A0X  
wyn@ornl.gov

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= Cooperation requires participation. Competition teaches cooperation. =

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Date: Thu, 16 Jun 1994 20:03:56 GMT  
From: ihnp4.ucsd.edu!swrinde!cs.utexas.edu!utnut!nott!cunews!news@network.ucsd.edu  
To: ham-digital@ucsd.edu

References <2tklvo\$7e5@gopher.cs.uofs.edu>, <2tn8p0\$7b@abyss.West.Sun.COM>,  
<2tq2jv\$sa4@freenet3.scri.fsu.edu>,  
Subject : Re: An open note to Gary Coffman, KE4ZV

>: There's a big difference between a 56kb/s full-duplex landline

>: connection and 56kb/s amateur half-duplex packet.

>We can do full duplex cross-band. And if it is through a repeater the  
>user only needs a receiver for 1 of the bands. This could be a \$100 or less  
>scanner for 440 MHz.

I don't really think you could use a scanner for 56 kbps rx. More like  
a demodulator and a downconverter. However, since the Hamtronics  
downconverter is only about \$50 to 75 it's still pretty cheap.

The trick is that full duplex really doesn't buy you much improvement  
in performance, for a multi-user network. If you are all sharing  
the network, then you have to take turns transmitting. Full  
duplex will allow you to determine if you have collided with another  
transmitter and thus stop transmitting sooner and free the channel  
quicker. If however, you want to do something like a multi-point  
video conference using something like CUSeeME full duplex would  
not buy you as much as increasing your data rate by 3 or 6 db:-)

Full duplex repeater is a must, but half duplex user stations  
are not really that much worse off from full duplex user  
stations. Fast acquisition, and lock up time of demods would  
also probably buy you more improvement than full duplex user  
stations. A nit with the GRAPES-WA4DSY modem, mine needs about  
10 or so mSec preamble or it starts losing lots of packets.  
A couple of the guys here have modified the PLL's to bring it  
down in the 2 mSec range though.

56 kbps is cool but getting old. With applications like Mosaic,  
CUSeeMe, and other interactive whiteboard sorts of software  
out there - 56 kbps seems like 1200 baud did 7 years ago when  
I got my first TNC .. neat but too slow. It's time to start  
pushing the envelope some more ... What is needed now is a cheap  
easy to build and align 1 Mbps+ modem!

im

--

Ian A. McEachern, VE3PFH	This space for rent.
Packet Working Group, Ottawa A.R.C.	
im@hydra.carleton.ca	
ian@ve3pfh.ampr.org	

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Date: Thu, 16 Jun 94 22:17:53 -0500  
From: news.delphi.com!usenet@uunet.uu.net  
To: ham-digital@ucsd.edu



References <1994Jun12.140915.1245@ke4zv.atl.ga.us>, <wb6wCrB332.H3o@netcom.com>, <1994Jun13.124359.5359@ke4zv.atl.ga.us>

Subject : Re: info wanted: new Kantronics 9k6 modem

Hi. I've just joined Internet through Delphi and noticed the comments on the KPC-9612 (new Kantronics 9600/1200 TNC). I don't know how often I'll be on here but I am the Test Engineer for Kantronics. The new KPC-9612 is not a G3RUH clone, it's an MXCOM chip (MX589 to be exact). The HDLC is done in firmware, as most of the Kantronics TNCs are. The Data Engine is the one exception with an 85C30 SCC doing the dirty work.

The new KPC-9612 is fully compatible with the G3RUH systems, and I've been testing it on the air against the Data Engine. The KPC-9612 has been connected to many different types of radios and works well with most of them. All of the new generation radios exhibit a slightly long TXD, but they are fully synthesized units.

I'm hesitant to give pricing here, but the paperwork for FCC certification is on someone's desk in Washington, and as soon as it comes back, the unit will be shipping. Hopefully that will be around July 10 or earlier.

Hope that helps.

73, Karl - WK5M @ WK5M.#NEKS.KS.USA.NOAM (no business packet mail please!)

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Date: 16 Jun 1994 13:37:03 -0400

From: ihnp4.ucsd.edu!usc!cs.utexas.edu!utnut!nott!cunews!freenet.carleton.ca!  
freenet3.scri.fsu.edu!freenet3.scri.fsu.edu!not-for-mail@network.ucsd.edu

To: ham-digital@ucsd.edu

References <CrEA75.147@sfu.ca>, <2tk1vo\$7e5@gopher.cs.uofs.edu>, <2tn8p0\$7b@abyss.West.Sun.COM>enet3

Subject : Re: An open note to Gary Coffman, KE4ZV

Dana Myers (myers@bigboy.West.Sun.COM) wrote:

: There's a big difference between a 56kb/s full-duplex landline  
: connection and 56kb/s amateur half-duplex packet.

We can do full duplex cross-band. And if it is through a repeater the user only needs a receiver for 1 of the bands. This could be a \$100 or less scanner for 440 MHz.

: I for one think it would be the cat's meow to build a fast, wide area  
: network on radio. I mean, people like MCI, ATT, and others have shown

: us how.

--

Bruce M. Marshall bmm1@freenet.fsu.edu voice 615 481 0990 fax 615 481 8039

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Date: Fri, 17 Jun 94 03:19:38 GMT

From: ihnp4.ucsd.edu!swrinde!gatech!newsxfer.itd.umich.edu!zip.eecs.umich.edu!  
yeshua.marcam.com!news.kei.com!ub!galileo.cc.rochester.edu!uhura.cc.rochester.edu!  
fval\_ltd@network.ucsd.edu

To: ham-digital@ucsd.edu

References <1994Jun16.065537.28157@spartan.ac.brocku.ca>,  
<jfhCrHvnC.Gz8@netcom.com>, <1994Jun16.104846.4325@mallrc.mala.bc.ca>i.co  
Subject : Re: Railroad track as an antenna?

In <1994Jun16.104846.4325@mallrc.mala.bc.ca> wagner@mala.bc.ca (TOM WAGNER,  
Wizzard of old Audio/Visual Equipment.....Nanaimo Campus) writes:

>Modern railays use "block control/detection" for location of trains. This  
>system relies on the the fact that a railroad train can be a moving short

[crunch]

>BTW track maintenance gear has insulated wheels so that they don't trip the  
>detection circuitry.

Just to note, the block system isn't really modern. Been around for almost  
100 years, i believe. Want to say since 1868, but not sure (hey, if they  
could have fax machines back then, I am sure they could do block control)  
Certain RRs do mandate that maintenance equip not shunt the track, while  
others require it. I think Union Pacific now has equipment that shunts the  
tracks since it is a bit safer in teh long run. The Burlington Northern  
doesn't, tho I met one guy whos vehicle shunted the track if he stepped on  
the brakes and gas at the same time or so -- advantageous for tripping  
crossing guards, etc.

trey

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trey valenta fval\_ltd@cc.rochester.edu  
189 milburn street apt #8 N2WJU  
rochester ny 14607 716.242.9008  
Post No Bills

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End of Ham-Digital Digest V94 #199

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